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PROCEEDINGS OF THE ASSOCIATION.

THE forty-eighth annual meeting was held at Columbus, Ohio, from August 19th to 26th. There were 352 members and associates in attendance and 273 papers were presented before the sections. Twenty-eight States, the District of Columbia and Canada were represented as follows: Ohio, 113; New York, 52; District of Columbia, 25; Pennsylvania, 21; Massachusetts, 18; Indiana and Michigan, 12 each; Iowa and Illinois, 9 each; Kentucky, 7; Canada, Connecticut, Kansas, New Hampshire, Nebraska and Wisconsin, 6 each; Minnesota, Texas and Maryland, 5 each; Missouri and Virginia, 4 each; West Virginia and North Carolina, 3 each; New Jersey and Colorado, 2 each; Alabama, Rhode Island, Washington and Louisiana, 1 each.

The papers were distributed among the sections as follows: Fourteen before Section 'A' (including five reports of progress); forty before Section 'B'; fifty-five before Section 'C'; fifteen before Section 'D'; thirty-three before Section 'E'; nineteen before Section 'F'; thirty-three before Section 'G'; twenty-seven before the Botanical Club of the Association; twenty before Section 'H,' and seventeen before Section 'I.'

The first general session was called to order at 10 o'clock on Monday morning by the retiring President, Professor Frederic W. Putnam, of Harvard University, who with a few remarks introduced the President-elect, Dr. Edward Orton, of Ohio State University. Dr. Orton took the chair and introduced General Axline, who welcomed the Association on behalf of the State of Ohio, and was followed by Judge M. B. Earnhart, representing the city of Columbus. Dr. William O. Thompson, President of the Ohio State University, then spoke on behalf of the University, and President Orton replied for the Association. The addresses of Dr. Thompson and of President

Orton are given in full in this issue of SCIENCE.

A resolution by the Council was then read by the General Secretary, extending the privileges of associate membership to the members of the Local Committee, to citizens of Columbus and the immediate vicinity interested in scientific work, and to members of the affiliated societies meeting with the Association.

In accordance with custom the Permanent Secretary read the names of members and fellows of the Association deceased since the Boston meeting. Among these were the names of two honored past presidents of the Association, Professor 'O. C. Marsh, of Yale University, and Professor Daniel G. Brinton, of the University of Pennsylvania.

The Local Secretary, Professor B. F. Thomas, representing the Local Committee, then made announcement of the arrangements for the reception and entertainment of the Association. In addition to luncheons provided in one of the University buildings, the receptions given by President and Mrs. Thompson and by the Columbus Club, and the several entertainments provided for the ladies, the members of the Association were invited to join excursions to the gas fields near Lancaster, to the coal fields of the Hocking Valley, to the prehistoric fortifications at Fort Ancient, and to the islands in Lake Erie. The latter excursions were on Saturday and consequently did not interrupt the serious work of the sections. On Monday a more extended excursion was arranged to Mackinac and the Great Lakes. The excursions and entertainments were largely attended, and the resolutions of thanks presented by President Mendenhall at the close of the meeting were seconded and carried with unusual cordiality.

On Monday afternoon the addresses of the Vice-Presidents were delivered as follows:

At Two o'clock.

Vice-President BENJAMIN, before Section of Social and Economic Science. Subject: 'The Past Presidents of the Associations.'

Vice-President WHITEAVES, before Section of Geology and Geography. Subject: 'The Devonian in Canada.'

Vice-President THOMSON, before Section of Physics. Subject: 'The Field of Experimental Research.'

At Three o'clock.

Vice-President MACFARLANE, before Section of Mathematics and Astronomy. Subject: 'The Fundamental Principles of Algebra.'

Vice-President BULL, before Section of Mechanical Science and Engineering. Subject: 'Engineering Education as a Preliminary Training for Scientific Research Work.'

Vice-President GAGE, before Section of Zoology. Subject: 'The Importance and the Promise in the Study of the Domestic Animals.'

At Four o'clock.

Vice-President VENABLE, before Section of Chemistry. Subject: 'Definition of the Element.'

Vice-President BARNES, before Section of Botany. Subject: 'The Progress and Problems of Plant Physiology.'

Vice-President WILSON, before Section of Anthropology. Subject: 'Beginnings of the Science of Prehistoric Anthropology.'

These addresses are in course of publication in *SCIENCE*, while in the issue for last week will be found the address of the retiring President, Professor Putnam, on 'A Problem in American Anthropology,' delivered on Monday evening. On Wednesday evening Professor C. E. Munroe, of the Columbian University, gave the lecture complimentary to the citizens of Columbus, his subject being 'Applications of Modern Explosives.'

Among the items of executive business we may note that authority was given to officers of the Association whereby any section may arrange for a joint meeting with an independent society of similar scope. Section H was authorized to hold its usual winter meeting. The report of the Treasurer and Permanent Secretary showed a gratifying increase in the funds of the As-

sociation. In addition to income derived from investments, the Permanent Secretary was able to turn over to the Treasurer, to be added to the permanent fund, \$1,000 derived from membership fees.

President Orton announced the gift of \$1,000 from Mr. Emerson McMillin, well known for his generous benefactions to science. Thereupon Mr. McMillin was elected a patron of the Association.

The amendments to the constitution, acted upon by the Council and presented to the Association at the Boston meeting and already printed, were adopted. New amendments to the Constitution were proposed by Dr. McGee, making the term of office of the Treasurer five years and by Dr. Cattell adding a Section of Physiology and Experimental Medicine.

The Committee on the White Race in America made a report and was given a grant of \$50 for the establishment of an anthropometric laboratory at the next meeting of the Association. A second grant of \$50 was made for the quantitative study of biological variation under Dr. Davenport, and to report and extend this work a committee was appointed, consisting of Drs. Boas, Cattell, Minot, Eigenmann and Davenport. The only other grant made for research was one of \$100 for the purpose of stocking pools with different species of blind vertebrates where they may be reared and studied in the light, the work being carried out by Professor Eigenmann.

Reports were also made by the committees on the library, on standards of measurement and on the U. S. Naval Observatory. Several committees that had accomplished the work for which they had been appointed were discharged.

The officers nominated for 1900 are as follows:

President—R. S. Woodward, Columbia University.

Vice-Presidents—Section A, mathematics and astronomy, Asaph Hall, Jr., University of Michigan;

section B, physics, Ernest Merritt, Cornell University; section C, chemistry, James Lewis Howe, Washington and Lee University; section D, mechanical science and engineering, J. A. Brashear, of Pittsburg, Pa.; section E, geology and geography, J. F. Kemp, Columbia University; section F, zoology, C. B. Davenport, Harvard University; section G, botany, W. Trelease, Missouri Botanical Garden; section H, anthropology, A. W. Butler, of Indianapolis; section I, economic science and statistics, C. M. Woodward, Washington University.

Permanent Secretary—L. O. Howard, United States Entomologist, of Washington.

General Secretary—Charles Baskerville, the University of North Carolina.

Secretary of the Council—William Hallock, Columbia University.

Secretaries of Sections—Section A, W. M. Strong, Yale University; section B, R. A. Fessenden, of Allegheny, Pa.; section C, A. A. Noyes, Massachusetts Institute of Technology; section D, W. T. Magruder, Ohio State University; section E, J. A. Holmes, University of North Carolina; section F, C. H. Eigenmann, University of Indiana; section G, D. T. Macdougall, New York Botanical Garden; section H, Frank Russell, Harvard University; section I, H. T. Newcombe, of Washington.

Treasurer—R. S. Woodward, Columbia University.

FREDERICK BEDELL,
General Secretary.

THE DEFINITION OF THE ELEMENT.*

IT is with hesitation that I enter upon so speculative a discussion as the nature of the elements, and yet there are reasons why it should prove of great profit to draw the attention of this representative gathering of the chemists of America to this subject. We have nearly reached the close of the first century in which these elements have been the subject of experimental research. The ingenuity and the patient labor of an army of workers have been directed at the solution of the many problems connected with these elementary sub-

stances, and the ultimate aim, the goal, of all their striving has been the discovery of the properties and the nature of the atom.

It is eminently fitting that, as we stand at the threshold of the new century, we glance back along the road we have already come and take some account of the progress we have made. The quicksands of mere speculation must be avoided, and yet the mental vision, the 'scientific imagination,' must be called into service in considering that which so far transcends our cruder actual vision as the incomparable atom itself. There is another reason for considering the nature of the elements. At several times during the century a wider vision has made it necessary to recast the definition of the elements to accord with increasing knowledge. It would seem as if another such period of change were approaching. There may be need of a truer definition, and how shall this be realized or the new definition properly fitted unless the knowledge gained be summed up and appreciated?

The conception of an element among the Greek philosophers and the earlier alchemists was very different from the modern idea. This conception sprang from the theories as to the formation of the material universe. The elements were the primal forms of matter seen only combined, impure, imperfect. They were the essences or principles out of which all things were evolved. In the four-element theory, which was so widely spread among the ancients, the fire, air, earth and water were not the ordinary substances known under these names, but the pure essences bestowing upon fire and water their peculiar properties. These essences were not thought of as actual substances capable of a separate material existence, and gradually the belief that a transmutation was possible between them sprang up. Thus they themselves might be derived from some one of

* Address of the Vice-President before Section C—Chemistry—of the American Association for the Advancement of Science, at the Columbus meeting, August, 1899.